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EXAMINER	
OGUNBIYI, OLUWATOSIN A	
ART UNIT	**PAPER NUMBER**
1645	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	12/26/2006	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 12/26/2006.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/526,369	KATSUYAMA ET AL.	
	Examiner	Art Unit	
	Oluwatosin Ogunbiyi	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) *7-18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/2005,7/2005,7/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I claims 1-6 in the reply filed on 10-25-2006 is acknowledged. The traversal is on the ground(s) that claims requires a transformed yeast capable of expressing a heterogeneous protein and showing a change in a growing state in an expression state of the protein as compared to that in a non-expression state of the protein. This is at least one of the special technical features shared by the present claims. Moreover, Applicants respectfully submit that there exist no under burden for the Examiner to search all claims in their entirety.

Applicant(s) are reminded that the restriction requirement was according to lack of unity of invention rules under PCT Rule 13.1 as the instant application is filed under 35 U.S.C. 371 as National stage of a PCT international application (MPEP 1893.03). Under lack of unity rules, there is no requirement for search burden on the examiner. Lack of unity of invention may be directly evident "*a priori*," that is, before considering the claims in relation to any prior art, or may only become apparent "*a posteriori*," that is, after taking the prior art into consideration. For example, independent claims to A + X, A + Y, X + Y can be said to lack unity *a priori* as there is no subject matter common to all claims. In the case of independent claims to A + X and A + Y, unity of invention is present *a priori* as A is common to both claims. However, if it can be established that A is known, there is lack of unity *a posteriori*, since A (be it a single feature or a group of features) is not a technical feature that defines a contribution over the prior art. (See MPEP chapter 1850 under 'Determination of Unity of Invention').

In the instant case, the technical feature of the first mentioned invention in Group I, which is the method steps for screening a physiologically active substance using a transformed yeast is anticipated by the art and as such lacks unity with the inventions of Group II and III. The technical feature of Group I is therefore not "special" within the meaning of PCT Rule 13.2 because it does not provide for a novel contribution that the claimed invention makes over the prior art.

Therefore, Applicant(s) argument is not persuasive as the technical feature of the invention of Group I is anticipated by the art. Hence, the restriction requirement is still deemed proper and is therefore made FINAL.

Claims 7-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 10/25/2006.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement filed July 3, 2006 has been considered. An initialed copy is enclosed.

The information disclosure statement filed March 3, 2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

The information disclosure statement filed July 15, 2005 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein i.e. documents not in English have not been considered.

Specification

A preliminary examination of this application reveals that it includes terminology which is so different from that which is generally accepted in the art to which this

invention pertains that a proper search of the prior art cannot be made. For example: the term 'aspiration deficient yeast'.

Applicant is required to provide a clarification of these matters or correlation with art-accepted terminology so that a proper comparison with the prior art can be made. Applicant should be careful not to introduce any new matter into the disclosure (i.e., matter which is not supported by the disclosure as originally filed).

The use of the trademarks EPPENDORF, VENTPOL, MUPID, TUPPERWARE has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are drawn to a method of screening a physiologically active substance, comprising the steps of: (1) contacting a transformed yeast with a test sample, wherein the transformed yeast is capable of expressing a heterogeneous protein, and shows a change in a growing state in an expression state of the protein as compared to that in a non-expression state of the protein; (2) culturing the yeast under conditions that the protein is capable of being expressed; and (3) measuring the growing state of the yeast, wherein the physiologically active substance is judged to be present in the test sample in a case where the growth of the yeast is lowered or improved in the presence of the test sample as compared to that in the absence of the test sample as a control.

The specification does not provide any definition or guidance as to the structural, physical or chemical characteristics of a heterogeneous protein. The specification only defines heterogeneous protein functionally as 'a protein for an yeast capable of inducing a change in the growing state of an yeast' and 'the heterogeneous protein includes a fragment of the protein as long as the fragment has a similar function to that of the protein' (specification page 10 last bridging paragraph, page 11 lines 1-2, page 13 lines 11-12).

The genus of heterogeneous proteins is vast and encompass many different proteins and fragments of proteins potentially having different functions (for example, kinases, phosphatases, helicases, DNAses, transcriptases, proteases) and which are unrelated by structure and the disclosure fails to adequately define the common structural attributes of the genus of heterogeneous proteins that have the related function. Mere function does not describe a structure, because the specification does not provide relevant identifying characteristics, including a known disclosed correlation between function and structure. The courts have held that in these instances, the specification lacks written description see *Enzo Biochem Inc. v. Gen-Probe Inc. 63 USPQD2D 1609 (CAFC 2002)* and *University of Rochester v. G. D. Searle & Co. 69 USPQ2D 1886 (CAFC 2004)*. When the genus is vast and compounds (in this case –

heterogeneous proteins) are claimed by function alone and the specification lacks a known or disclosed correlation between structure and function, the written description of the specification does not convey possession of the claimed genus.

Furthermore, one of skill in the art would reasonably conclude that the disclosure of accession numbers (specification page 22) as examples of genes encoding a heterogeneous protein fails to provide a representative number of species to describe the claimed genus of heterogeneous proteins. Also, the disclosure of the sequence of a protein belonging to the tob and caf family and identification of regions amino acid homology in the tob and caf family fails to provide a representative number of species to describe the vast and varied genus of heterogeneous proteins as instantly claimed (specification page 14 lines 17 to page 17).

In conclusion, the specification lacks adequate written description for the vast genus of heterogeneous protein having the specifically recited function and one of skill in the art would not recognize that applicants had possession of the genus of heterogeneous proteins as instantly claimed.

Claims 1-6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to the phrase ' wherein the transformed yeast is capable of expressing a heterogeneous protein'; the term capable renders the claims indefinite as it is not clear whether the heterogeneous protein is expressed or not. Applicant(s) can modify claim to recite 'wherein the transformed yeast expresses the heterogeneous protein' provided there is support for such modification in the specification as instantly filed.

As to the phrase 'shows a change in a growing state', its not clear what growing state the claim is referring to. For example, if the growing state (of the transformed yeast) is lowered, can the test sample further lower the growing state?

As to the term 'heterogeneous protein', is the protein composed of different proteins, or is the protein homologous to yeast and is composed of different proteins or

is the protein heterologous to yeast and composed of different proteins or is the protein simply heterologous to yeast. Dictionary definition of heterogeneous means (1) consisting of parts or aspects that are unrelated or unlike each other (2) originating outside of the body from another individual or species (see dictionary definition of heterogeneous provided). Consequently, the skilled artisan would not be able to readily ascertain the metes and bounds of the term in its current context. The term is not an art standard usage and therefore the metes and bounds of the 'heterogeneous" as it modifies protein cannot be readily ascertained by the skilled artisan.

As to claim 1, said claim recites the limitation "the yeast". There is insufficient antecedent basis for this limitation in the claim. It is not clear in the claim whether 'the yeast' refers to the transformed yeast or to another yeast that is not transformed.

As to claim 5, the phrase aspiration in "yeast is deficient in aspiration ability" is confusing in light of the dictionary definition of 'aspiration'. Aspiration is defined in the American Heritage Dictionary (see attached) as 'expulsion of breath in speech', 'the act of breathing in; inhalation' or 'the process of removing fluids or gases from the body with a suction device'. Does applicant mean, for example, that the yeast is deficient in inhalation or is the yeast is deficient in removing fluids or gases from its cell? The term used in the art for such yeast as described on page 25 lines 15-20 of the specification is respiration deficient yeast and not aspiration deficient yeast. Applicants should specifically clarify the metes and bounds of this term.

As to claim 6, the term "change" in claim 5 is a relative term, which renders the claim indefinite. The term "change" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The claim is not clear as to the basis of comparison for measuring ' a change'. In addition, the phrases ' a change in wet-weight of the yeast' and ' a change in dry-weight of the yeast' is confusing. Does applicant mean to measure the wet-weight or dry- weight of a single yeast cell? Appropriate correction is needed to clarify the claim provided there is support for said clarifications in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Bounaga et al. WO 01/20020 March 23, 2001.

The claims are drawn to

(claim 1) a method of screening a physiologically active substance, comprising the steps of: (1) contacting a transformed yeast with a test sample, wherein the transformed yeast

is capable of expressing a heterogeneous protein, and shows a change in a growing state in an expression state of the protein as compared to that in a non-expression state of the protein; (2) culturing the yeast under conditions that the protein is capable of being expressed; and (3) measuring the growing state of the yeast,

wherein the physiologically active substance is judged to be present in the test sample in a case where the growth of the yeast is lowered or improved in the presence of the test sample as compared to that in the absence of the test sample as a control.

(claim 2) wherein the heterogeneous protein is capable of lowering the growth of the yeast as compared to that of the non-expression state.

(claim 3) The method of screening according to claim 1 or 2, wherein the heterogeneous protein is a protein involved in regulating cell cycle of a mammal cell.

(claim4) the method of screening according to claim 3, wherein the protein involved in regulating cell cycle of a mammal cell is a protein involved in intracellular

signaling of GO/G1 phase of a mammal cell.

(claim 5) The method of screening according to claim 1, wherein the growing state of the yeast is determined in the step (3) by monitoring a change in turbidity of an yeast culture medium, a morphological change of the yeast, a change in wet-weight of the yeast, a change in dry-weight of the yeast, a change in endogenous enzyme activity of the yeast or a change in amount of an endogenous protein of the yeast.

Bounaga et al teach a method for screening and identification of compounds or compositions useful as herbicides, growth regulators or fungicides comprising (1) addition of a compound or composition to be screened or identified to a culture or culture area of a yeast strain transformed with and expressing one or more plant or animal or human cell cycle control genes or mutants thereof as well as to a control yeast strain; and (2) determining the effect on the phenotype such as inhibition or stimulation of growth and/or cell division and/or changing cell shape and size of said transformed yeast compared to said control yeast (page 4 lines 1-9, page 7 line 21, page 12 lines 30-34). Bounaga et al teach that the transformed yeast expresses a cell cycle control gene resulting in growth arrest or growth acceleration (page 30 claims 7 and 8) and said cell cycle control gène is involved in regulation of cell cycle of a mammal (page 12 lines 30-34), for example, involved in control of entry (that is from GO/G1 phase) and progression through S phase of the cell cycle (page 5 lines 9-10) such as cyclin dependent kinases (CDK), cyclin dependent kinase inhibitor, cyclin A, D, E etc (page 5 line 1-9 and lines 10-34 and page 6 lines 1-9). Bounaga et al teach methods of testing effect of compounds or compositions on growth of yeast (page 15 lines 27-34) by measuring shape, size, number, growth rate, growth stimulation or growth inhibition, phenotype, turbidity (page 16 lines 4-13).

Claims 1-5 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Superti-furga et al. 1996. Nature Biotechnology vol. 14 page 600-605.

The claims are drawn to

(claim 1) a method of screening a physiologically active substance, comprising the steps of: (1) contacting a transformed yeast with a test sample, wherein the transformed yeast
is capable of expressing a heterogeneous protein, and shows a change in a growing state in an expression state of the protein as compared to that in a non-expression state of the protein; (2) culturing the yeast under conditions that the protein is capable of being expressed; and (3) measuring the growing state of the yeast,
wherein the physiologically active substance is judged to be present in the test sample in a case where the growth of the yeast is lowered or improved in the presence of the test sample as compared to that in the absence of the test sample as a control.

(claim 2) wherein the heterogeneous protein is capable of lowering the growth of the yeast as compared to that of the non-expression state.

(claim 3) The method of screening according to claim 1 or 2, wherein the heterogeneous protein is a protein involved in regulating cell cycle of a mammal cell.

(claim4) the method of screening according to claim 3, wherein the protein involved in regulating cell cycle of a mammal cell is a protein involved in intracellular signaling of GO/G1 phase of a mammal cell.

(claim 5) The method of screening according to claim 1, wherein the growing state of the yeast is determined in the step (3) by monitoring a change in turbidity of an yeast culture medium, a morphological change of the yeast, a change in wet-weight of the yeast, a change in dry-weight of the yeast, a change in endogenous enzyme activity of the yeast or a change in amount of an endogenous protein of the yeast.

Superti-furga et al teach a screen for regulators and antagonizers of protein tyrosine kinases comprising (1) transforming yeast cells c-Src under conditions which expression of c-Src can be induced (2) transforming (contacting) said transformed yeast with a vector comprising a cDNA library from fibroblasts or B-cells under a constitutive promoter (3) and then measuring whether said transformed yeast is able to grow when c-Src expression is induced (page 600 first paragraph under results section and figure 1). Superti-furga et al teach that c-Src (human and chicken) expression in transformed yeast cells causes growth inhibition (figure 4a and b). c-Src is a protein involved in

regulating cell cycle of a mammal cell and is involved in intracellular signaling of GO/G1 phase of a mammalian cell . Superti-furga teach that the growing state of the transformed yeast is determined by a morphological change i.e. the ability of cells to form colonies (page 601 column 2 fig 1).

Claims 1-5 are rejected 35 U.S.C. 102(b) as being clearly anticipated by Florio et al. Molecular Biology of the Cell vol. 5 p283-296, 1994.

claim 1) a method of screening a physiologically active substance, comprising the steps of: (1) contacting a transformed yeast with a test sample, wherein the transformed yeast
is capable of expressing a heterogeneous protein, and shows a change in a growing state in an expression state of the protein as compared to that in a non-expression state of the protein; (2) culturing the yeast under conditions that the protein is capable of being expressed; and (3) measuring the growing state of the yeast,
wherein the physiologically active substance is judged to be present in the test sample in a case where the growth of the yeast is lowered or improved in the presence of the test sample as compared to that in the absence of the test sample as a control.

(claim 2) wherein the heterogeneous protein is capable of lowering the growth of the yeast as compared to that of the non-expression state.

(claim 3) The method of screening according to claim 1 or 2, wherein the heterogeneous protein is a protein involved in regulating cell cycle of a mammal cell.

(claim4) the method of screening according to claim 3, wherein the protein involved in regulating cell cycle of a mammal cell is a protein involved in intracellular signaling of GO/G1 phase of a mammal cell.

(claim 5) The method of screening according to claim 1, wherein the growing state of the yeast is determined in the step (3) by monitoring a change in turbidity of an yeast culture medium, a morphological change of the yeast, a change in wet-weight of the yeast, a change in dry-weight of the yeast, a change in endogenous enzyme activity of the yeast or a change in amount of an endogenous protein of the yeast.

Florio et al teach (1) transformed yeast expressing v-src wherein said expressed v-src lowers the growth of said transformed yeast (p 287 fig.1) (2) coexpressing (contacting) human phosphotryosylphosphatase (hPTP1B) in said transformed yeast (p.289 fig.5C) (3) and measuring the growing state of the yeast. Florio et al teach that expression of v-src in yeast cells lowers the growth of yeast and that coexpression with hPTP1B reverses growth inhibition of v-src (p 289 fig.5C). Florio et al teach growth of said transformed yeast cells was monitored by measuring a change in the absorbance of the yeast culture (i.e. turbidity) at A_{600nm} (p 289 fig 5C). V-src is a protein involved in regulating cell cycle of a mammal cell and is involved in intracellular signaling of the GO/G1 to S phase (i.e. quiescent cell entry into S phase) of the cell cycle (see under citation of relevant art Riley et al 2001 Oncogene vol. 20 p. 5941-5950).

Claims 1, 2,5 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Perkins et al. Cancer Research vol. 61:4175-4183.

The claims are drawn to

(claim 1) a method of screening a physiologically active substance, comprising the steps of: (1) contacting a transformed yeast with a test sample, wherein the transformed yeast

is capable of expressing a heterogeneous protein, and shows a change in a growing state in an expression state of the protein as compared to that in a non-expression state of the protein; (2) culturing the yeast under conditions that the protein is capable of being expressed; and (3) measuring the growing state of the yeast,

wherein the physiologically active substance is judged to be present in the test sample in a case where the growth of the yeast is lowered or improved in the presence of the test sample as compared to that in the absence of the test sample as a control:

(claim 2) wherein the heterogeneous protein is capable of lowering the growth of the yeast as compared to that of the non-expression state.

(claim 5) The method of screening according to claim 1, wherein the growing state of the yeast is determined in the step (3) by monitoring a change in turbidity of an yeast

culture medium, a morphological change of the yeast, a change in wet-weight of the yeast, a change in dry-weight of the yeast, a change in endogenous enzyme activity of the yeast or a change in amount of an endogenous protein of the yeast.

Perkins et al teach a method of screening of inhibitors of poly(ADP-ribose) Polymerase/PARP1 and PARP2 comprising contacting a yeast transformed and expressing PARP1 and PARP2 (p. 4177 fig.1) with chemical compounds (p. 4178 fig. 3, p.4179 fig. 5). Perkins et al teach that expression of PARP1 or PARP2 in said yeast causes growth inhibition (p. 4177 fig. 1) and that said chemical compounds reverse growth inhibition caused by PARP1 expression in said yeast (p. 4178 fig.3). Perkins et al teach growth of said transformed yeast cells was monitored by measuring a change in the absorbance of the yeast culture (i.e. turbidity) at A_{600nm} (p. 4177 column 2 second full paragraph).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Prior to the below rejections: the term used in the art for the yeast described on page 25 lines 15-26 of the specification is respiration deficient yeast and not aspiration deficient yeast. The examiner has therefore interpreted yeast deficient in aspiration ability to mean yeast deficient in respiration ability for prior art purposes.

Claims 1 to 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bounaga et al WO 01/20020 March 23, 2001 in view of Nakahama et al.1993 US 5.182, 195.

The claims are drawn to (claim 1) a method of screening a physiologically active substance, comprising the steps of: (1) contacting a transformed yeast with a test sample, wherein the transformed yeast
is capable of expressing a heterogeneous protein, and shows a change in a growing state in an expression state of the protein as compared to that in a non-expression state of the protein; (2) culturing the yeast under conditions that the protein is capable of being expressed; and (3) measuring the growing state of the yeast,
wherein the physiologically active substance is judged to be present in the test sample in a case where the growth of the yeast is lowered or improved in the presence of the test sample as compared to that in the absence of the test sample as a control.

(claim 6) wherein the transformed yeast is deficient in aspiration ability.

Bounaga et al is set forth supra. Bounaga et al does not teach a method of screening wherein the transformed yeast is deficient in aspiration ability.

Nakahama et al teach transformation of respiration deficient yeast. Nakahama teach that respiratory deficient strains of yeast transformed with expression plasmids of genes provide higher gene expression than their parent strains (i.e. non-respiratory deficient yeast) and that the gene expression is increased by rendering the yeast respiratory deficient (see abstract and column 2 lines 31-41).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a respiratory deficient yeast for transformation and expression of genes in the method of screening of Bounaga et al as taught by Nakahama et al because Nakahama teach that respiratory deficient strains of yeast transformed with expression plasmids of genes provide higher gene expression that their parent strains and provide a higher amount of expressed protein.

Claims 1 10 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Superti-Furga et al. 1996. Nature Biotechnology vol. 14 page 600-605. in view of Nakahama et al.1993 US 5.182, 195.

The claims are drawn to (claim 1) a method of screening a physiologically active substance, comprising the steps of: (1) contacting a transformed yeast with a test sample, wherein the transformed yeast
is capable of expressing a heterogeneous protein, and shows a change in a growing state in an expression state of the protein as compared to that in a non-expression state of the protein; (2) culturing the yeast under conditions that the protein is capable of being expressed; and (3) measuring the growing state of the yeast,
wherein the physiologically active substance is judged to be present in the test sample in a case where the growth of the yeast is lowered or improved in the presence of the test sample as compared to that in the absence of the test sample as a control.

(claim 6) wherein the transformed yeast is deficient in aspiration ability.

Superti-furga et al is set forth supra. Superti-furga et al does not teach a method of screening wherein the transformed yeast is deficient in aspiration ability.

Nakahama et al teach transformation of respiration deficient yeast. Nakahama teach that respiratory deficient strains of yeast transformed with expression plasmids of genes provide higher gene expression than their parent strains (i.e. non-respiratory deficient yeast) and that the gene expression is increased by rendering the yeast respiratory deficient (see abstract and column 2 lines 31-41).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a respiratory deficient yeast for transformation and expression of genes in the method of screening of Superti-furga et al as taught by Nakahama et al because Nakahama teach that respiratory deficient strains of yeast transformed with expression plasmids of genes provide higher gene expression that their parent strains and provide a higher amount of expressed protein.

Claims 1 to 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Florio et al. Molecular Biology of the Cell vol. 5 p283-296, 1994 in view of Nakahama et al.1993 US 5.182, 195.

The claims are drawn to (claim 1) a method of screening a physiologically active substance, comprising the steps of: (1) contacting a transformed yeast with a test sample, wherein the transformed yeast
is capable of expressing a heterogeneous protein, and shows a change in a growing state in an expression state of the protein as compared to that in a non-expression state of the protein; (2) culturing the yeast under conditions that the protein is capable of being expressed; and (3) measuring the growing state of the yeast,
wherein the physiologically active substance is judged to be present in the test sample in a case where the growth of the yeast is lowered or improved in the presence of the test sample as compared to that in the absence of the test sample as a control.

(claim 6) wherein the transformed yeast is deficient in aspiration ability.

Florio et al is set forth supra. Florio et al does not teach a method of screening wherein the transformed yeast is deficient in aspiration ability.

Nakahama et al teach transformation of respiration deficient yeast. Nakahama teach that respiratory deficient strains of yeast transformed with expression plasmids of genes provide higher gene expression than their parent strains (i.e. non-respiratory deficient yeast) and that the gene expression is increased by rendering the yeast respiratory deficient (see abstract and column 2 lines 31-41).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a respiratory deficient yeast for transformation and expression of genes in the method of screening of Florio et al as taught by Nakahama et al because Nakahama teach that respiratory deficient strains of yeast transformed with expression plasmids of genes provide higher gene expression that their parent strains and provide a higher amount of expressed protein.

Claims 1 ~~and~~ to 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perkins et al. Cancer Research vol. 61:4175-4183in view of Nakahama et al.1993 US 5.182, 195.

The claims are drawn to (claim 1) a method of screening a physiologically active substance, comprising the steps of: (1) contacting a transformed yeast with a test sample, wherein the transformed yeast
is capable of expressing a heterogeneous protein, and shows a change in a growing state in an expression state of the protein as compared to that in a non-expression state of the protein; (2) culturing the yeast under conditions that the protein is capable of being expressed; and (3) measuring the growing state of the yeast,
wherein the physiologically active substance is judged to be present in the test sample in a case where the growth of the yeast is lowered or improved in the presence of the test sample as compared to that in the absence of the test sample as a control.

(claim 6) wherein the transformed yeast is deficient in aspiration ability.

Perkins et al is set forth supra. Perkins et al does not teach a method of screening wherein the transformed yeast is deficient in aspiration ability.

Nakahama et al teach transformation of respiration deficient yeast. Nakahama teach that respiratory deficient strains of yeast transformed with expression plasmids of genes provide higher gene expression than their parent strains (i.e. non-respiratory deficient yeast) and that the gene expression is increased by rendering the yeast respiratory deficient (see abstract and column 2 lines 31-41).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a respiratory deficient yeast for transformation and expression of genes in the method of screening of Perkins et al as taught by Nakahama et al because Nakahama teach that respiratory deficient strains of yeast transformed with expression plasmids of genes provide higher gene expression that their parent strains and provide a higher amount of expressed protein.

Citation of Relevant Art

1. Taylor et al. 1996. Bioessays vol. 18 no.1 p. 9-11. Taylor et al teach that Src (c-Src) plays an essential role in G1 progression of the cell cycle.

2. Xing et al. 2000. Molecular and Cellular Biology p.7363-7377. Xing et al teach that c-Src is an intracellular signaling molecule (page 7365 column 1 last sentence of first incomplete paragraph).
3. Riley et al. 2001 Oncogene vol. 20 p.5941-5950. Riley et al teach that v-src induces quiescent cells to enter S phase and is a membrane associate tyrosine kinase oncoprotein involved in intracellular signaling of the cell cycle (see abstract and introduction.

Status of Claims

No claims allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Oluwatosin Ogunbiyi whose telephone number is 571-272-9939. The examiner can normally be reached on 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Siew can be reached on 571-272-0787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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